

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

## Listing of Claims:

1. (Currently Amended) ~~A Position~~ position-sensitive detector for measuring charged particles comprising a crystalline substrate and a surface region, which is formed by the surface region comprising an amorphous layer with a structured, metallic layer disposed above it, ~~characterised in that wherein~~ the structure of the metallic layer ~~is continued~~ continues through the amorphous layer and at least partially into the crystalline substrate ~~amorphous layer.~~
2. (Canceled)
3. (Currently Amended) ~~The Position~~ position-sensitive detector according to claim 1, ~~characterised in that wherein~~ the amorphous layer is formed from germanium or silicon.
4. (Currently Amended) ~~The Position~~ position-sensitive detector according to claim 1, ~~characterised in that wherein~~ the metallic layer ~~consists of~~ comprises aluminium, palladium or gold.
5. (Currently Amended) ~~The Position~~ position-sensitive detector according to claim 1, ~~characterised in that wherein~~ the ~~crystalline region beneath the amorphous layer~~ substrate is formed of germanium, silicon or a III-V compound.
6. (Currently Amended) ~~The Position~~ position-sensitive detector according to claim 1, ~~characterized in that wherein~~ the structure of the metallic layer is formed from segments, ~~which provide~~ having a mutual spacing of less than 200  $\mu\text{m}$ , ~~in particular, a~~ spacing of less than 100  $\mu\text{m}$ , by particular preference less than 20  $\mu\text{m}$ .

7. (Currently Amended) ~~The Position~~ position-sensitive detector according to claim 1, ~~characterised in that wherein~~ the amorphous layer is ~~applied to~~ disposed on a semiconductor material.

8. (Currently Amended) ~~The Position~~ position-sensitive detector according to claim ~~[[1]]~~ 3, ~~characterised in that wherein~~ the amorphous layer ~~provides an electrical conductivity, which is substantially less than the conductivity of the material disposed beneath the amorphous layer~~ is not doped.

9. (Previously Presented) Tomograph or Compton camera with a detector according to claim 1.

10. (New) The position-sensitive detector according to claim 6, wherein the mutual spacing is less than 100  $\mu\text{m}$ .

11. (New) The position-sensitive detector according to claim 6, wherein the mutual spacing is less than 20  $\mu\text{m}$ .

12. (New) A method of producing a position-sensitive detector for measuring charged particles, comprising:

- providing a crystalline substrate;
- disposing on the substrate an amorphous Gallium layer;
- disposing on the amorphous Gallium layer a metallic layer;
- removing portions of the metallic layer, the amorphous Gallium layer and the crystalline substrate such that at least one structured electrode is formed.